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IS 3845 (1966): Code of practice for joints used in wooden furniture [CED 35: Furniture]



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“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard*

CODE OF PRACTICE FOR  
JOINTS USED IN WOODEN FURNITURE

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INDIAN STANDARDS INSTITUTION  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

# Indian Standard

## CODE OF PRACTICE FOR JOINTS USED IN WOODEN FURNITURE

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( Continued on page 2 )

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# *Indian Standard*

## CODE OF PRACTICE FOR JOINTS USED IN WOODEN FURNITURE

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 23 November 1966, after the draft finalized by the Furniture Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** To ensure satisfactory performance of wooden furniture from the view points of function and strength a series of Indian Standards for wooden furniture are being formulated. Among the important aspects proper joints determine the efficient functioning of furniture. Various types of joints are in use in wood work and the choice of a particular type depends on the situation of its use. This standard has therefore, been prepared to serve as a guide to the wood-worker.

**0.3** In the formulation of this standard, due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in this field in this country.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or analysis, shall be rounded off in accordance with IS: 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

**1.1** This standard covers the joints to be used in locations in various types of wooden furniture.

### 2. WORKMANSHIP

**2.1** The workmanship and finish of all joints shall be such as to provide proper tightness of fitting.

**2.2** A joints shall be properly glued before fixing them in position.

**2.3** Dowels, brackets, glued blocks shall be provided in accordance with the accepted practices in the trade.

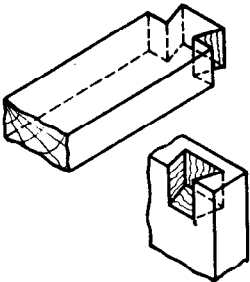
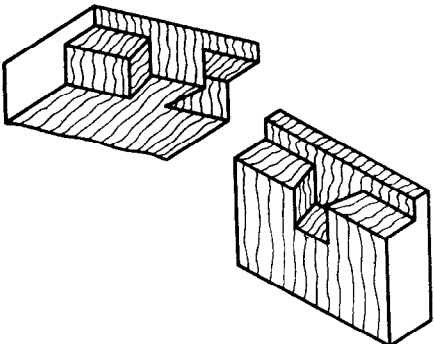
**2.4** The details of the joint, such as type, figure, recommended location and remarks are given in Appendix A.

\*Rules for rounding off numerical values ( *revised* ).

# APPENDIX A

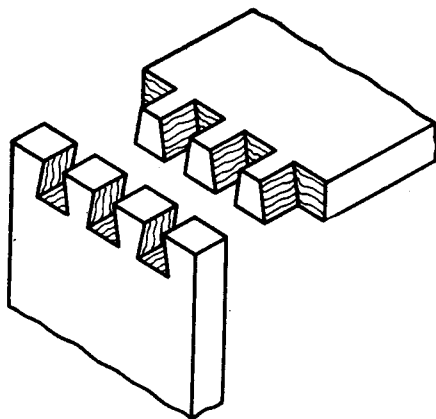
( Clause 2.4 )

## DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE

SL No.	NAME OR TYPE OF JOINT	ILLUSTRATION	RECOMMENDED LOCATION	REMARKS
1	Dovetail joint			
	Type A1		Rail to frame joint	This method is used at points of unusual strain
	Type A2 (secret dovetail)		Rail to frame joint	This method is used at points of unusual strain



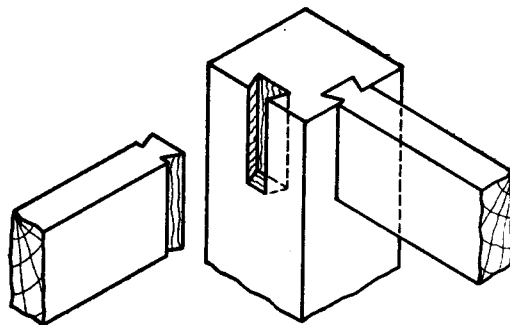
Type B



Frame joint

This is one of the strongest terminal joints

Type C

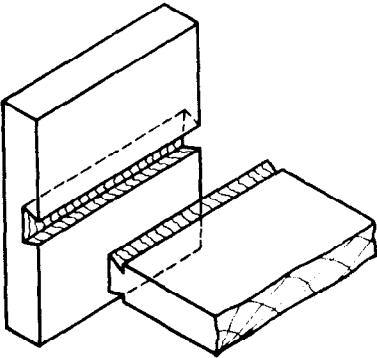
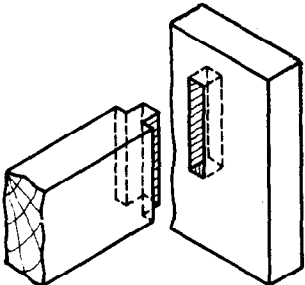


Rail to leg joint

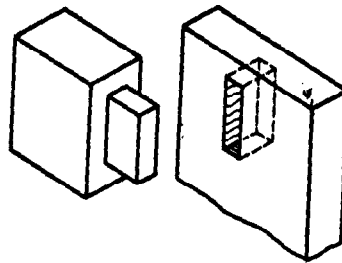
This is a very strong method of joining legs and rails

# DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE — *Contd*

IS : 3845 - 1966

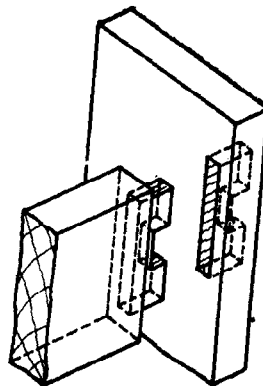
Sl. No.	NAME OR TYPE OF JOINT	ILLUSTRATION	RECOMMENDED LOCATION	REMARKS
	Type D		Middle frame joint	Sides joined by this method cannot be pulled apart
2	Mortise and tenon joint:			
	Type A		Rail to frame joint	This method gives good results

Type B  
(shouldered)



Rail to frame joint For extra strong joint

Type C



Rail to frame joint This is a particularly strong joint

# DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE — *Contd*

SL. NAME OR TYPE  
No. OF JOINT

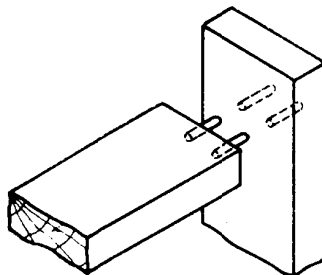
ILLUSTRATION

RECOMMENDED  
LOCATION

REMARKS

3 Dowel joint:

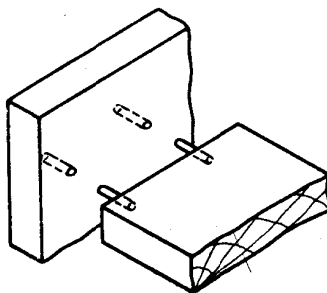
Type A



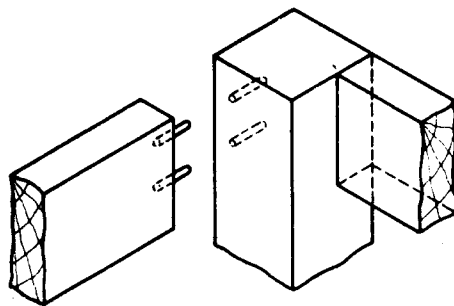
Rail to frame joint This is one of the easiest joints to make

NOTE — Number and size of dowels shall be determined by the section and thickness of the members,

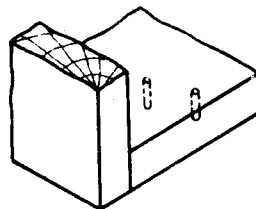
Type B



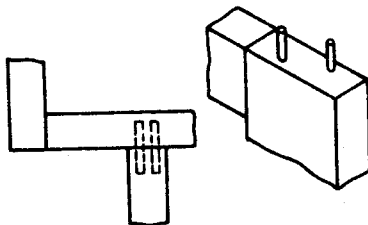
Middle frame joint This is an easy joint often used by the amateur craftsmen

**Type C****Rail to leg joint**

This method is suitable  
for amateur craftsmen

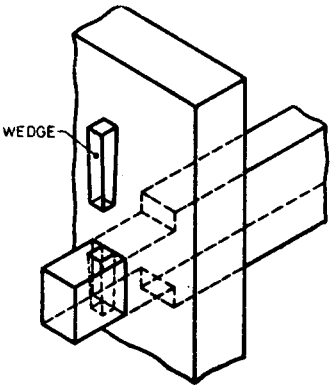
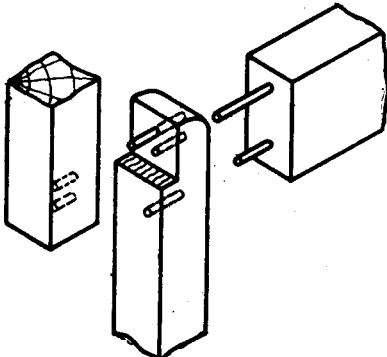
**Type D****Leg to drawer box  
units etc**

This method is ideal for  
home craftsmen

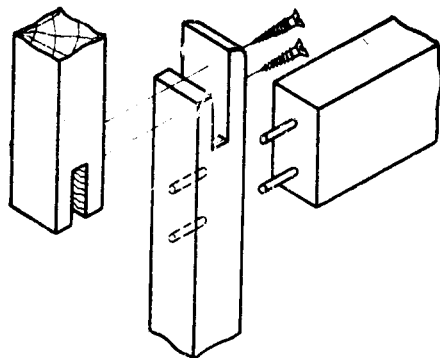


# DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE — *Contd*

IS : 3845 - 1966

Sl No.	NAME OR TYPE OF JOINT	ILLUSTRATION	RECOMMENDED LOCATION	REMARKS
4	Exposed wedge joint	 <p>WEDGE</p>	Rail to frame joint	The wedge presses the rail and panel tightly together making a very solid joint
5	Rabbet joint with dowels		Rail to leg joint	Joint for attaching front legs to seat rails

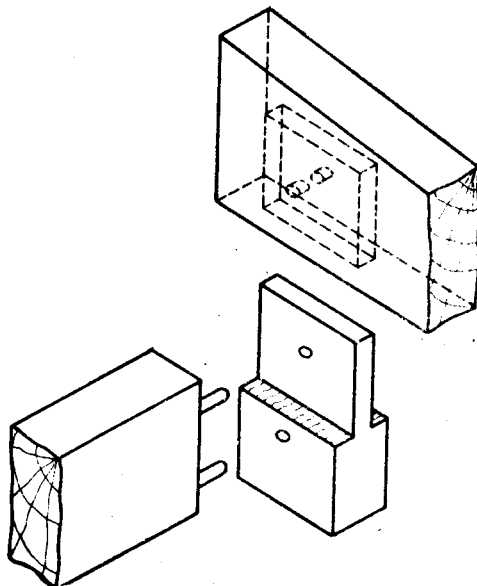
- 6 Mortise and tenon joint with screws



Rail to leg joint

Joint for attaching front legs to seat rails

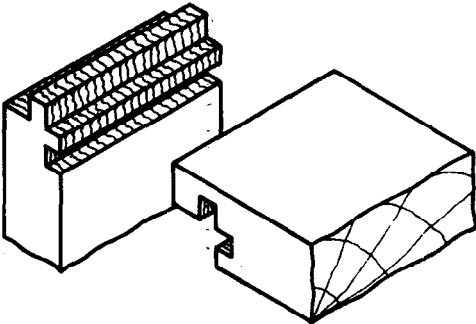
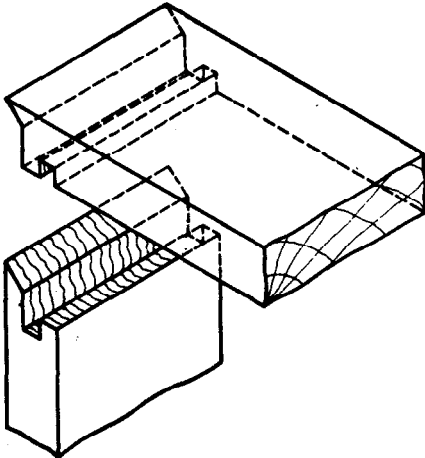
- 7 Mortise and tenon joint with dowels



Rail to leg joint

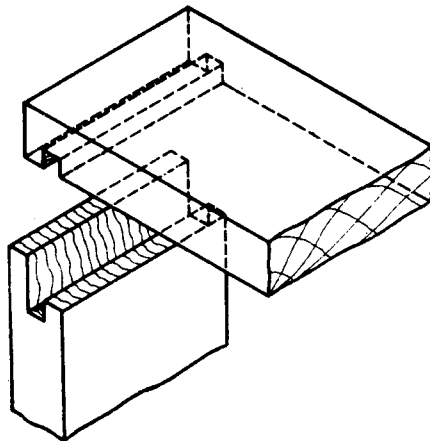
Another joint for front legs and seat rails

# DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE — *Contd*

Sl	NAME OR TYPE OF JOINT	ILLUSTRATION	RECOMMENDED LOCATION	REMARKS
8	Lock butt joint		Frame joint	This is an excellent joint to use where accurate fitting is required
9	Lock mitre joint		Frame joint	This joint is stronger than the mitre tongue and groove joint (see Fig. at Sl No. 11)



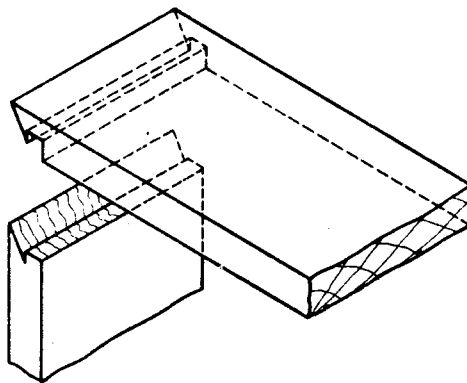
10 Milled corner joint



Frame joint

The closed edges of this joint prevent the cracks which often occur with the box corner joint. This is commonly used in drawer construction

11 Mitre tongue and groove joint



Frame joint

This joint is frequently used in commercial furniture

# DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE — *Contd*

IS: 3845-1966

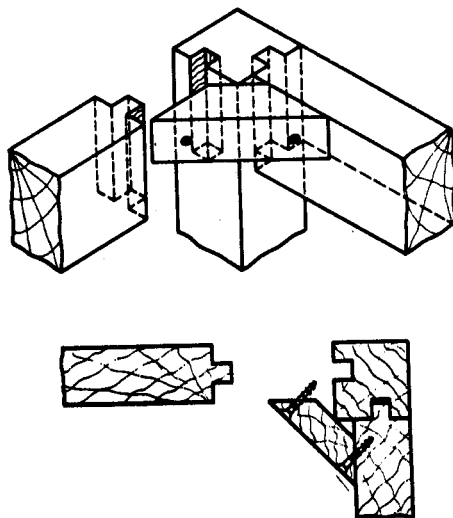
Sl. No. NAME OR TYPE OF JOINT

ILLUSTRATION

RECOMMENDED LOCATION

REMARKS

12 Mortise and tenon joint with corner block

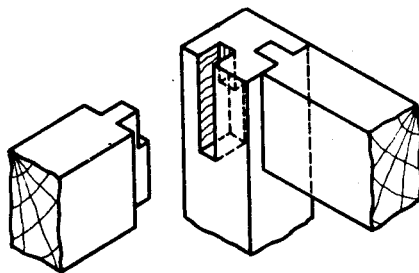


Rail to leg joint

The corner block strengthens the joint and is particularly useful in chair construction

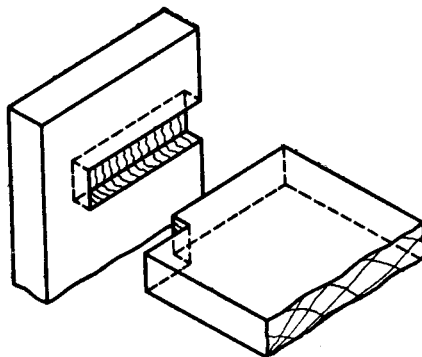
NOTE — The tenons should be of the maximum possible length, meeting in the centre in a mitre, wherever practicable.

13 Rebated mortise and tenon joint



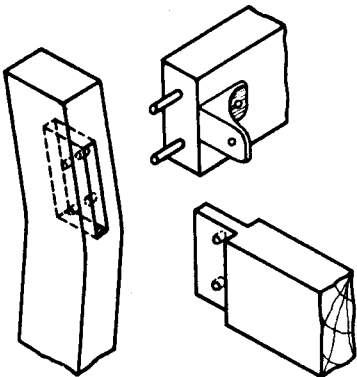
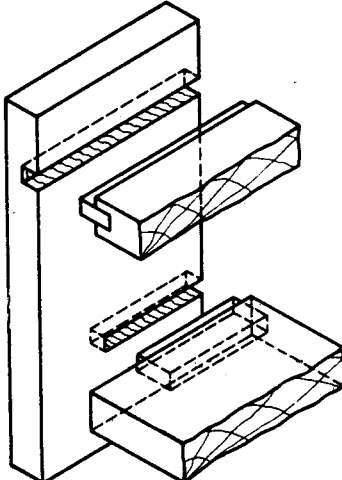
Rail to leg joint This is another excellent method of attaching legs

14 Stopped dado joint



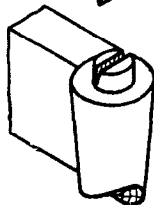
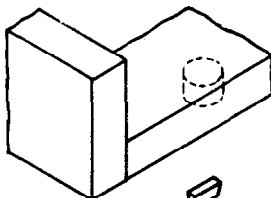
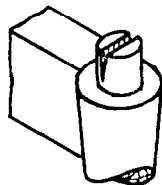
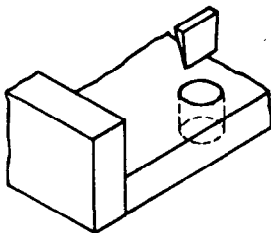
Middle frame joint This is an excellent method of joining certain types of wood work. The mechanics of the joint are not visible from the front

# DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE — *Contd*

Sl. No.	NAME OR TYPE OF JOINT	ILLUSTRATION	RECOMMENDED LOCATION	REMARKS
15	Three-way joint		Rail to leg joint	This is a method of joining the back leg of a chair to the side and back rails of the seat. The joint can be made with either mortise and tenon or dowels. A metal corner is used for reinforcement.
16	Through and stopper feather joint		Middle frame joint	When properly glued this is a good joint.

17 Wedge and dowel joint:

Type A



Type B

Leg to drawer box unit etc

This method may be used to attach legs independent of rails, as well as a leg and rail assembly. After installation wedge is cut flush with the top

NOTE — The dowel may also be expanded into a dovetail shaped hole after driving the wedge in position

Leg to furniture joint

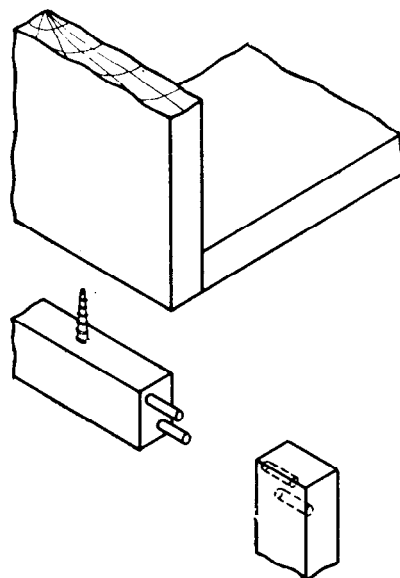
This method is similar to the one given above, except that the hole does not run through, and the wedge must be placed in position before the leg is inserted

# DETAILS OF JOINTS FOR USE IN VARIOUS TYPES OF WOODEN FURNITURE — *Contd*

IS: 3845-1966

SL No.	NAME OR TYPE OF JOINT	ILLUSTRATION	RECOMMENDED LOCATION	REMARKS
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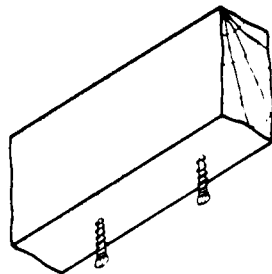
18 Wood screw joint



Leg to assembly  
joint

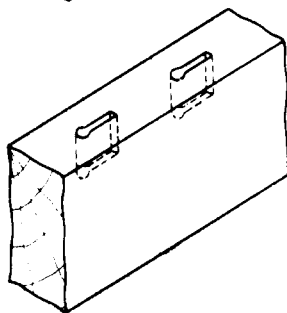
After legs and rails have been joined, the assembly is usually attached to the rest of the chair by means of screws inserted in the rail

19 Screw dowel joint



Planks and floor  
boards

This is a quick method  
of joining planks





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